The 411 on SCR and DEF

With the introduction of D Series excavators, CASE has further established itself as the leader in implementing Selective Catalytic Reduction (SCR) technology into its equipment. Six major product lines – excavators, dozers, wheel loaders, backhoes, skid steers and compact track loaders – now feature SCR as a solution for meeting Tier 4 Final emissions standards.

SCR is new for many – and it provides a number of advantages and benefits. Here's the 411 on DEF and SCR:

1. **What is SCR?**
   SCR is a simple after-treatment solution that combines Diesel Exhaust Fluid (DEF) with exhaust to convert emissions into nitrogen and water.
2. **What is DEF?**
   DEF is a scientifically blended mixture of deionized water and urea, and is non-hazardous.
3. **SCR Improves Fuel Efficiency**[1]
   SCR doesn't use fuel to burn off accumulated particulate, helping lower fuel consumption while managing emissions.
4. **SCR Lowers Operating Temperatures**
   As SCR is an after-treatment solution, it does not require the elevated temperatures of a Diesel Particulate Filter (DPF) to burn off particulate. By keeping the average engine temperature lower over the life of the machine, engine components and surrounding systems may experience less wear.
5. **Simple to Maintain**
   There is no DPF, no DPF regeneration or associated lifetime service costs.
6. **Top Off Your Tank**
   For the system to work properly, there must always be DEF in the DEF tank. Emissions regulations require that a machine de-rates if it is operated without DEF. While DEF is consumed at a slower pace than diesel, CASE recommends topping off each time you refuel to ensure that DEF is always present.
7. **Storing and Handling**
   Storing and handling DEF is easy – and CASE dealers offer a variety of handling and container options approved for use with DEF. Storing/transferring in unapproved containers or mixing your own DEF is not recommended. As SCR and DEF become more common in all sizes and varieties of equipment, contractors need to identify trusted sources for DEF, and for reliable ways of dispensing DEF, such as in totes or other bulk handling systems.
8. **Temperature and Environment**
   As possible, DEF should be stored out of direct sunlight. Optimal storage temperatures are between 12 and 86 degrees Fahrenheit – the warmer it

[1] Results vary by product

gets, the shorter shelf life will be. DEF in the machine will freeze, but it will not affect machine performance or expand beyond the size of the tank. DEF is quickly thawed during the machine warm-up process on cold mornings.